

WHAT IS CLAIMED IS:

1. A portable information device comprising:
an RFID for making communication using a magnetic
field;

5 a battery receiving section;
a magnetic material sheet;
an antenna coil of the RFID; and
an IC and condensers for resonance connected to the
antenna coil;

10 wherein the antenna coil of the RFID is arranged on
a side of a battery cover for the battery in the battery
receiving section, and

the magnetic material sheet arranged between the
antenna coil and the battery within the battery receiving
15 section.

2. A portable information device according to claim
1, wherein the antenna coil of the RFID has an intermediate
tap, the condensers for resonance are connected to both ends
20 of the antenna coil, and the IC is connected to the middle
between one of the ends of the antenna coil and the
intermediate tap.

3. A portable information device according to claim
25 2, wherein the intermediate tap is an intermediate tap the
number of turns of which is from $1/3$ to $1/5$ of the total
number of turns of the antenna coil.

4. A portable information device according to claim 1, wherein the magnetic material sheet has an initial permeability of 10 or more and a thickness of 0.1 mm or more and 1.0 mm or less.

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5. A portable information device according to claim 2, wherein the magnetic material sheet has an initial permeability of 10 or more and a thickness of 0.1 mm or more and 1.0 mm or less.

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6. A portable information device according to claim 3, wherein the magnetic material sheet has an initial permeability of 10 or more and a thickness of 0.1 mm or more and 1.0 mm or less.

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7. A portable information device according to claim 1, further having a metal foil or a metal vacuum-evaporation film between the magnetic material sheet and the battery.

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8. A portable information device according to claim 2, further having a metal foil or a metal vacuum-evaporation film between the magnetic material sheet and the battery.

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9. A portable information device according to claim 3, further having a metal foil or a metal vacuum-evaporation film between the magnetic material sheet and the battery.

10. A portable information device according to claim 4, further having a metal foil or a metal vacuum-evaporation

film between the magnetic material sheet and the battery.

11. A portable information device according to claim
1, further comprising an IC card, for both of contact and
5 non-contact uses, which is connected to the antenna coil
through a flexible substrate and a connector and is mounted
on a position different from the position of the antenna
coil.

10 12. A portable information device according to claim
2, further comprising an IC card, for both of contact and
non-contact uses, which is connected to the antenna coil
through a flexible substrate and a connector and is mounted
on a position different from the position of the antenna
15 coil.

13. A portable information device according to claim
3, further comprising an IC card, for both of contact and
non-contact uses, which is connected to the antenna coil
20 through a flexible substrate and a connector and is mounted
on a position different from the position of the antenna
coil.

14. A portable information device according to claim
25 4, further comprising an IC card, for both of contact and
non-contact uses, which is connected to the antenna coil
through a flexible substrate and a connector and is mounted
on a position different from the position of the antenna

coil.

15. A portable information device according to claim
5 5, further comprising an IC card, for both of contact and
non-contact uses, which is connected to the antenna coil
through a flexible substrate and a connector and is mounted
on a position different from the position of the antenna
coil.

10 16. A portable information device according to claim
1, wherein no metal vacuum-evaporation film or conductive
material coating is applied to any member of the battery
receiving section and the battery cover.

15 17. A portable information device according to claim
2, wherein no metal vacuum-evaporation film or conductive
material coating is applied to any member of the battery
receiving section and the battery cover.

20 18. A portable information device according to claim
3, wherein no metal vacuum-evaporation film or conductive
material coating is applied to any member of the battery
receiving section and the battery cover.

25 19. A portable information device according to claim
4, wherein no metal vacuum-evaporation film or conductive
material coating is applied to any member of the battery
receiving section and the battery cover.

20. A portable information device according to claim 5, wherein no metal vacuum-evaporation film or conductive material coating is applied to any member of the battery receiving section and the battery cover.